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KINGWA SOYBEANS

by R. J. GARBER

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MORGANTOWN

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A NEW PURE-LINE VARIETY of soybeans developed on the Agronomy Farm is described and named "Pekwa" in West Virginia Agricultural Experiment Station Bulletin 247, issued in 1932. In a footnote on the last page of this bulletin mention is made of another pure-line selection also developed at the West Virginia Station and named "Kingwa." These new varieties, which are practically indistinguishable, came from individual plant selections of the commercial Peking variety. The purpose of this bulletin is (1) to present evidence that makes it seem desirable to substitute the name Kingwa for Pekwa, and (2) to discontinue distribution of the strain now grown under the name of Kingwa.

Since Bulletin 247 was published, Kingwa has become well established in southern Indiana, and the seed of this variety is handled by commercial seedsmen. The acreage in Pekwa, on the other hand, is confined largely to certain sections of West Virginia, and the seed of this variety is not so well established in the seed trade. A brief history of the introduction of Kingwa into Indiana may be of interest.

Seed of the two pure-line selections I-27-7 (later named Pekwa) and I-21-8 (later named Kingwa) was exhibited in the "Better Crops Exhibit" by West Virginia at the International Grain and Hay Show held at Chicago, Illinois, in 1927. M. O. Pence, extension agronomist of Purdue University, obtained seed of I-21-8 and turned it over to the agronomy department of that institution for testing. In 1928 the variety was included in the soybean variety trials at Lafayette, and in 1929 the seed stock was increased. In the spring of 1930 two bushels of Kingwa was supplied to Henry L. Hahn, a farmer near Evansville, Indiana. In 1931, 200 bushels of his crop was certified, and since then the acreage of Kingwa has increased steadily in southern Indiana. In some areas Kingwa is the only variety of soybeans that is grown at present.

In the comparative yield trials of Pekwa and Kingwa at Morgantown, W. Va., carried on for a period of twelve years, no significant difference in yielding ability either of hay or seed has been found between these varieties. The average annual yields as determined in row-plats replicated four or five times are shown in Table 1.

TABLE 1—Average yields of seed in bushels per acre and of hay in tons per acre of Pekwa and Kingwa soybeans grown during a period of twelve years in comparative two-row plats near Morgantown, W. Va.

Variety	Average annual seed yields in bushels per acre												Grand average
Pekwa	37.8	20.3	25.3	20.3	21.3	28.3	17.3	32.7	27.6	18.0	17.3	26.6	24.4
Kingwa	36.8	20.5	24.2	22.9	20.8	29.2	18.1	31.1	30.7	18.5	16.0	26.1	24.6
Average annual hay yields in tons per acre													
Pekwa	2.82	2.16	2.49	2.01	2.33	1.75	1.49	2.20	1.99	1.57	1.73	1.72	2.02
Kingwa	2.90	2.40	2.16	2.08	2.27	1.89	1.38	2.15	2.37	1.53	1.60	1.70	2.04

It is apparent from the data presented in Table 1 that Pekwa and Kingwa do not differ significantly in yielding ability of either hay or seed when grown under conditions that obtain on the Agronomy farm near Morgantown.

The same two strains of soybeans have been grown in comparable variety trials during a period of four years by the Purdue Agricultural Experiment Station at Lafayette, Indiana. The seed and hay yields which were kindly furnished to the writer by R. R. Mulvey are shown in Table 2. The data from Indiana corroborate those obtained in West Virginia in showing no significant difference in yielding ability between Pekwa and Kingwa.

TABLE 2—Average yields of seed in bushels per acre and of hay in tons per acre of Pekwa and Kingwa soybeans grown during a period of four years in comparable plats near Lafayette, Indiana

Variety	Average annual seed yields in bushels per acre				Grand average
Pekwa	38.9	25.0	25.6	35.9	31.4
Kingwa	36.2	24.9	25.0	33.7	30.0
Average annual hay yields in tons per acre					
Pekwa	3.25	1.85	1.90	3.09	2.52
Kingwa	3.04	1.88	1.95	3.15	2.50

At the Ohio Agricultural Experiment Station, Pekwa and Kingwa have been compared during two years. The yield data collected in these tests and kindly furnished by J. B. Park of that station indicate no significant difference between the two varieties.

The data presented above, together with other similar data, show that Pekwa and Kingwa are very similar in yielding ability. There is also a striking resemblance between the two varieties with respect to other characteristics. Both have marked ability to retain their leaves even after the pods are ripe; both have relatively fine stems and have

an erect growth habit, although Pekwa is inclined to be somewhat more erect than Kingwa. Kingwa is perhaps a few days later in maturing, is somewhat less uniform, and has slightly smaller seeds than Pekwa. It is extremely difficult if not impossible to distinguish these two varieties when growing side by side.

At the time (1931) Pekwa was named in Bulletin 247 and was being distributed in West Virginia, Kingwa was being increased in southern Indiana. Owing largely to the fact that the latter region includes a relatively extensive soybean-growing area, whereas the area devoted to this crop in West Virginia is rather small and scattered, Kingwa has increased more rapidly than Pekwa. In fact, Kingwa has become fairly well established in commercial channels, while Pekwa is known chiefly in West Virginia.*

Soybean-growing areas other than those in Indiana and West Virginia are considering one of these two varieties, and inasmuch as the two are so similar, it seems unwise to continue to distribute both of them and attempt to maintain their purity, particularly where they are grown near one another in the same region.

At a recent meeting of agronomists representing the states concerned, it was proposed to continue to increase and distribute only one of these two strains and to adopt the name *Kingwa* because it is commercially established. Inasmuch as Selection I-21-7 (the strain at present grown under the name of Pekwa) is more uniform and has a somewhat more erect habit of growth than Selection I-21-8 (the strain at present grown under the name Kingwa) it was suggested that henceforth selection I-21-7 only be increased and *distributed under the name Kingwa*. There is not enough difference between the two strains to justify carrying both under two names; therefore the suggestions have been accepted by the West Virginia Agricultural Experiment Station. *The pure line selection I-21-7 made from the Peking variety and formerly named Pekwa is hereby renamed Kingwa and at the proper time, application for registration under this name will be made.*

*At the time selection I-21-7 was named "Pekwa" by the West Virginia Agricultural Experiment Station it was expected that selection I-21-8 would be suppressed. However, the latter had already established a satisfactory record in southern Indiana, while selection I-21-7 was unknown to that region. As a result of this situation, and at the suggestion of K. E. Beeson, extension agronomist of Indiana, selection I-21-8 was named "Kingwa".

